

CHP Package System (Uninterruptible Power Supply)

NiSource Energy Technologies

- NiSource Energy Technologies (Merrillville, IN) worked with the developer of a new Hilton hotel to demonstrate a highly efficient and cost-effective modular Integrated Energy System (IES).
- The system consists of
 - Three microturbines to power the uninterruptible critical loads from the hotel
 - Heat recovery heat exchangers
 - Absorption chiller
 - Desiccant unit
 - Integrated control system

Hilton Garden Inn in Chesterton, Indiana



Front lobby



Hot Water Heating



Capstone 60-kW
microturbines

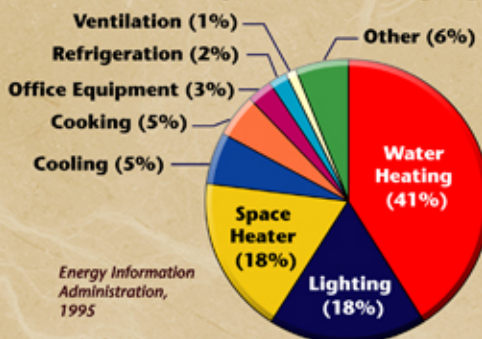


IES installation
at hotel

Total Building Integration/Optimization

- The "CHP system" is the entire building – a comprehensive approach with advanced controls and interconnection with grid.
- Unique hotel energy use patterns
 - Space heating (multiple heating zones in floor)
 - Large thermal load from hot water heating
 - Swimming pool and spa heating
- Advances in IES dynamic control systems and energy use further the goals of increasing efficiency, energy utilization, and cost savings.

Fuel Consumption for Lodging



Significant Accomplishment

On June 27, 2002, the NIPSCO electrical circuit feeding the Hilton Garden Inn, Chesterton, Indiana, was lost due to storm damage. The IES provided power to the critical circuits at the Hilton during this four-hour electrical outage. The Capstone microturbines furnished electrical power to the hotel kitchen, freezers, coolers, part of the lobby area, hot water heating, and critical hall lighting. The hotel remained open with its common areas lit and continued serving lunch to its guests as the local area remained dark.

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<http://www.eren.doe.gov/der/microturbines/microturbines.html>



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